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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,461

12/03/2004

Nolwenn Stephan

MCA-607 US

7606

25182 7590 09/06/2007

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EXAMINER

KIM, SUN U

ART UNIT

PAPER NUMBER

1723

MAIL DATE

DELIVERY MODE

09/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/517,461	Applicant(s) STEPHAN ET AL.	
	Examiner John Kim	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/3/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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1. The disclosure is objected to because of the following informalities: "Brief Description of The Drawings" should be inserted after line 16 of page 5 in the specification.

Appropriate correction is required.

2. Claim 36 is objected to because of the following informalities: "a" before "said" on lines 2-3 should be deleted. Appropriate correction is required.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 8, 20-21, 23-26 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Recitations of "said plate" in claim 8, "said portion of the core" in claim 20, "the core" in claim 21, "said melt flow rate" in each of claims 23-26 and "said layers" in claim 35 lack a positive antecedent basis.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 6, 9, 13-14, 16-19, 22, 27-28 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by European Patent No. 0 062 867 A2 (Adiletta).

Regarding claim 1, Adiletta teaches a filter cartridge comprising a filter pack formed of filtering medium (1), a tubular sheath (7) with a perforated wall surrounding the filter medium (1), two respective thermoplastic end caps (5, 6) in each of which there is embedded portion of the filtering pack situated along one of its edges and in each of which is embedded a portion of

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the sheath (7) situated along one of its edges characterized in that at least one end cap has a first disc (5, 6) and a second disc (16, 17) placed one above the other, the second disc (16, 17) made from thermoplastic, the second disc (16, 17) has the portion of the filtering pack (1) and the sheath (7) embedded, the first disc (5, 6) has a peripheral rim which surrounds the portion of the sheath (7) and the sheath (7) has a shoulder opposite the edge of the rim (see figures 1, 3; page 8, line 16 – page 10, line 16). Furthermore, Adiletta teaches that any plastic or resinous material or any metallic material resistant to corrosive attack and having a softening point above the temperature of use of the polymer filter can be employed for the end caps (see page 19, lines 5-9).

Regarding claim 6, the rim of the first disc (5, 6) projecting from a plate (see figures 1, 3).

Regarding claim 9, the shoulder on the sheath (7) and the edge of the rim of the first disc (5) has substantially same width (see figure 3).

Regarding claims 13-14, the rim of the first disc (5) has interruptions disposed at regular intervals and each extends over an arc with the same angle at the apex (see figure 1).

Regarding claims 16-19, the first disc (6) has opposite to the second disc (17) an annular rib or rim surrounding a central port (see figure 1) and a tubular core (8) with a perforated wall surrounded by filtering medium (1) and having, along at least one edge, a portion embedded in the second disc (17) (see figures 1-3, 5; page 9, line 8 – page 10, line 16).

Regarding claim 22, Adiletta teaches the use of the second disc (16, 17) made of fluoropolyethylene-propylene copolymer to bond the ends of filtering medium to the end cap (5, 6) (see page 9, line 25 – page 10, line 6). Therefore, it is inherent that the melt flow rate of the first

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disc is lower than the melt flow rate of the second disc for the first disc to be bonded to the filter medium rather than the second disc.

Regarding claims 27-28, the first disc (5, 6) and the second disc (16, 17) is an integral unit. Claims 27-28 is a product by process claim for molding discs by bi-injection.

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) (Claim was

Regarding claim 36, Adiletta teaches that the end caps can be made with appropriate raised or depressed portions and apertures to meet the shape and flow requirements of the ends of the filter support or sheath and the folds of the filter tubes (see page 19, line 21 – page 20, line 2).

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 2-5, 7-8, 10-12, 20-21 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adiletta as applied to claim 1 above and further in view of Pall '159 (US Patent No. 4,112,159) and Pall '309 (US Patent No. 4,521,309). Adiletta teaches filter cartridge as described in above paragraph 6.

Claims 2-5, 7-8, 10-12 and 20-21 essentially differ from the filter cartridge of Adiletta in reciting thinner neck in the portion of sheath or core, provision of frustoconical surface in sheath or core and corresponding surface in the rim of the first disc. Pall '159 teaches a filter cartridge including thinner neck in the portion of sheath or core (38), provision of frustoconical surface in sheath or core and corresponding surface in the rim of the end cap (26', 27') for bonding end cap to core or sheath (see figure 11; col. 15, lines 34-60). Pall '309 teaches a filter cartridge including thinner neck in the portion of sheath or core, provision of frustoconical surface in sheath or core via castellated end portions (9) and corresponding surface in the rim of the end cap (20, 21) for providing effective bonding of end cap to the core and/or sheath to prevent separation of the core and/or sheath from the end cap during the drying operation and during autoclaving (see figures 2, 4-5; col. 3, lines 48-60; col. 9, line 54 – col. 10, line 25). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the filter cartridge of Adiletta to provide thinner neck in the portion of sheath or core, provision of frustoconical surface in sheath or core and corresponding surface in the rim of the first disc or end cap for disclosed advantages above as suggested by Pall '159 and Pall '309.

Regarding claims 29-30, Adiletta teaches that any plastic or resinous material or any metallic material resistant to corrosive attack and having a softening point above the temperature of use of the polymer filter can be employed for the end caps (see page 19, lines 5-9). Adiletta also teaches the use of the second disc made of fluororoethylene-propylene copolymer (see page 9, line 25 – page 10, line 6). Pall '309 teaches that, where a corrosive fluid is being filtered, the internal support or core filter material and end cap can be made entirely from thermoplastic resins, such as polyethylene, polypropylene or polyamide, or any of the other thermoplastic materials (see col. 8, line 48 – col. 9, line 25; col. 9, lines 45-55). The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adiletta. Adiletta teaches filter cartridge as described in above paragraph 6. Claim 15 essentially differs from the cartridge of Adiletta in reciting that the rim has four interruptions each extending over an arc whose angle at the apex is approximately 30 degrees. It would have been an obvious matter of design choice to have desired number of interruptions extending over an arc whose angle at the apex is approximately 30 degrees, since applicant has not disclosed that having a specific number of interruptions extending over an arc at specific angle solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with any number of interruptions extending over an arc at any acute angle.

10. Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adiletta as applied to claim 1 above and further in view of Pall '309. Adiletta teaches filter cartridge as

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described in above paragraph 6. Claim 23-26 essentially differs from the filter cartridge of Adiletta in reciting that the melt flow rate of the materials for the first disc and second disc. Pall '309 teaches that, where a corrosive fluid is being filtered, the internal support or core filter material and end cap can be made entirely from thermoplastic resins, such as polyethylene, polypropylene or polyamide, or any of the other thermoplastic materials in Table (see col. 8, line 48 – col. 9, line 25; col. 9, lines 45-55). Listed thermoplastic materials in Table of Pall '309 inherently has numerous range of melt flow rates. Claimed melt flow rates are melt flow rates of homopolymer polypropylene and copolymer polypropylene as disclosed in page 11 of the specification. The selection of a known material based on its suitability for its intended use supported a *prima facie* obviousness determination in *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

11. Claims 31-32 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adiletta as applied to claim 1 above and further in view of Konstantin et al (US Patent No. 6,186,341 B1). Adiletta teaches filter cartridge as described in above paragraph 6. Claims 31-32 and 34-35 essentially differ from the filter cartridge of Adiletta in reciting a filter membrane and two support layers sandwiching the membrane (claim 31), a thermoplastic ribbon disposed in the vicinity of each edge of filtering medium (claim 32), thermoplastic support layer (claim 34), layers and a thermoplastic ribbon disposed in the vicinity of each edge of the polypropylene filter medium (claim 35). Konstantin et al teach a filter including a filter membrane (2) and two support layers (3, 4) sandwiching the membrane (2), a thermoplastic ribbon (1) disposed in the vicinity of each edge of filtering medium (2), thermoplastic support layer (3, 4), layers (3, 4) and a thermoplastic ribbon (1) disposed in the vicinity of each edge of the polypropylene filter

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medium (see figures 3-6; col. 4, line 42 – col. 6, line 34; col. 6, line 61 – col. 7, line 26). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to substitute the known filter medium for the filter medium of Adiletta.

12. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adiletta as applied to claim 1 above and further in view of Meyering et al (US Patent No. 4,579,698). Adiletta teaches filter cartridge as described in above paragraph 6. Claim 33 essentially differs from the filter cartridge of Adiletta in reciting a polyvinylidene fluoride (PVDF) membrane. Meyering et al teach a filter cartridge having known one of many hydrophilic type membrane filter including PVDF filter e.g. Millipore's DURAPORE (see col. 10, lines 23-32). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to substitute the known hydrophilic PVDF membrane for the hydrophilic filter medium of Adiletta made from a coating of fluoroethylene polymer.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References cited in PTO-892 teaches various filters with bonded end caps and sheath. US Patent No. 4,981,231 and 5,685,443 and US 2001/0013671 teach end cap thermoplastic materials including polypropylene.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kim whose telephone number is 571-272-1142. The examiner can normally be reached on Monday-Friday 7 a.m. - 3:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John Kim/
Primary Examiner, Art Unit 1723

JK
8/31/07